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**Notes:**

1. Untranslatable words are replaced with asterisks (\*\*\*\*).
2. Texts in the figures are not translated and shown as it is.

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## FULL CONTENTS

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**[Claim(s)]**

[Claim 1] It is a lock/unlock regulating system equipped with the lock/unlock control system which performs a data communication between the portable transmitters located in the communication range, judges the propriety of the attestation information transmitted from the portable transmitter, and controls the lock/unlock of lock equipment. While preparing the wireless data communication means in which the data communication between said lock/unlock control systems is possible in portable telephone equipment The lock/unlock regulating system characterized by enabling use of said portable telephone equipment as said portable transmitter by using characteristic ID information on the portable telephone equipment as said attestation information.

[Claim 2] While said portable telephone equipment transmits the password entered from the key control unit with said ID information, [ said lock/unlock control system ] The lock/unlock regulating system according to claim 1 characterized by controlling lock/unlock including collation with the password registered beforehand and the transmitted password.

[Claim 3] Said wireless data communication means is Bluetooth. Lock/unlock regulating system according to claim 1 or 2 characterized by performing a data communication between said lock/unlock control systems by the wireless communications by standard practice.

[Claim 4] Said wireless data communication means is a lock/unlock regulating system according to claim 1 or 2 characterized by performing a data communication between said lock/unlock control systems by the minute electric power wireless communications using the specific frequency in the frequency range used for communication with the communications network of said portable telephone equipment.

[Claim 5] Portable telephone equipment characterized by providing the wireless data communication means in which the data communication between lock/unlock control systems is possible, and a communications control means to transmit attestation information including characteristic ID information by said wireless data communication means in lock/unlock control mode.

[Claim 6] Said communications control means is portable telephone equipment according to claim 5 characterized by transmitting the password entered from the key control unit as attestation information with said ID information.

[Claim 7] Said wireless data communication means is Bluetooth. Portable telephone equipment according to claim 5 or 6 characterized by performing the wireless communications by standard practice.

[Claim 8] Said wireless data communication means is portable telephone equipment according to claim

5 or 6 characterized by performing the minute electric power wireless communications using the specific frequency in the frequency range used for communication with a communications network.

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## [Detailed Description of the Invention]

### [0001]

[Field of the Invention] This invention relates to the portable telephone equipment which can be used for the lock/unlock regulating system which can perform control of lock/unlock, such as a door of a house or a car, and an entrance of various institutions, based on the data communication between portable transmitters, and its lock/unlock regulating system.

### [0002]

[Problem to be solved by the invention] By the spread of portable telephone equipment (a portable telephone and PHS terminal machine) in recent years, those who walk around with portable telephone equipment are increasing in number overwhelmingly. On the other hand in recent years, the lock/unlock regulating system which replaces with the conventional mechanical key as keys, such as a car and a house, for example, controlled the lock/unlock of the door lock mechanism by the electric wave by a card shape portable transmitter and which is called a keyless entry system is spreading. In this case, when a user goes out, he will carry the portable transmitter as a key.

[0003] However, it can be said that a property of walk around [ in addition to portable telephone equipment which was described above / with the portable transmitter which functions as a key of a house or a car ] increases in number, and it is an inconvenient thing for a user. While a portable telephone equipment and portable transmitter is also equipped with both the Radio Communications Department at this time, in the former, it was not tried for inconvenient [ above-mentioned / for a user ] to combination-ize taking [ into consideration ] foil and them.

[0004] It is in offering the lock/unlock regulating system and portable telephone equipment which this invention was made in view of the above-mentioned situation, and can make it possible for the purpose to make portable telephone equipment use also [ transmitter / which is used as a key / portable ], as a result can aim at improvement in a user's convenience.

### [0005]

[Means for solving problem] [ the lock/unlock regulating system of Claim 1 of this invention ] by preparing a wireless data communication means in portable telephone equipment, and using characteristic ID information on the portable telephone equipment as attestation information As a portable transmitter for performing the data communication between lock/unlock control systems, it has the feature at the place which enabled use of portable telephone equipment. [ moreover, the portable telephone equipment of Claim 5 of this invention ] It has the feature at the place possessing the wireless data communication means in which the data communication between lock/unlock control systems is possible, and a communications control means to transmit the attestation information which includes characteristic ID information by a wireless data communication means in lock/unlock control mode.

[0006] According to this, the data communication between lock/unlock control systems can be performed, and the lock/unlock of lock equipment can be made to control by the wireless data communication means with which portable telephone equipment is equipped. In this case, [ portable telephone equipment ] since each has the characteristic portable apparatus ID from the first all over the worlds, such as a telephone number It becomes possible to set up the attestation information in a lock/

unlock control system easily in the user side, without causing confusion of performing and carrying out malfunction of the mistaken attestation, if characteristic ID information given to the portable telephone equipment is used as attestation information used for control of lock/unlock.

[0007] Therefore, portable telephone equipment can be made to use also [ transmitter / which is used as a key of a lock/unlock regulating system / portable ], if portable telephone equipment is carried, it will become unnecessary for a user to carry a portable transmitter separately, and he will do so the outstanding effect that improvement in a user's convenience can be aimed at. In addition, of course, it is good also as composition which can use two or more portable telephone equipment as a key, and uses the both sides of portable telephone equipment and a portable transmitter for exclusive use as a key by carrying out multidata input of the attestation information in a lock/unlock control system.

[0008] At this time, transmit as attestation information with ID information, and the password entered into the portable telephone equipment side from the key control unit [ the lock/unlock control system side ] It can constitute so that lock/unlock including collation with the password registered beforehand and the transmitted password may be controlled (Claim 2, 6 invention). Since attestation is performed [ according to this ] by the password in addition to ID information, can improve security nature for it further and [ the input of a password ] Since the key control unit which portable telephone equipment has from the first for inputs, such as a telephone number, can be used, it can realize without being accompanied by the addition of composition etc.

[0009] Moreover, at recent years, it is Bluetooth to portable telephone equipment. The means of communication (Bluetooth unit) by standard practice is established. For example, it is possible to make possible a wireless data communication with other apparatus, such as a personal computer, and Bluetooth as the above-mentioned wireless data communication means. It can constitute so that the wireless communications by standard practice may be performed (Claim 3, 7 invention). According to this, it becomes possible to perform easily the wireless data communication between portable telephone equipment and a lock/unlock control system, without establishing the means of communication only for [ lock/unlock control system ] communication.

[0010] Or the minute electric power wireless communications using the specific frequency in the frequency range used for communication with the communications network of portable telephone equipment can also constitute a wireless data communication means to perform a data communication, between lock/unlock control systems (Claim 4, 8 invention). According to this, it becomes possible to make the RF section which it has from the first make it serve a double purpose as a wireless data communication means of portable telephone equipment, and composition can be finished easily.

[0011]

[Mode for carrying out the invention] One work example of this invention is explained hereafter, referring to Drawings. [ the lock/unlock regulating system concerning this work example ] as an example which materialized this invention As typically shown in drawing 5, it is what controls the locking device (electric lock equipment 3) which carries out lock/unlock of the door 2 of the door of a house 1. Only a family can perform lock/unlock now by performing a data communication between the portable telephone equipment (portable telephone) 5 as a portable transmitter (key) which equips said house 1 side with the lock/unlock control system 4 which controls the lock/unlock of said electric lock equipment 3, for example, a family possesses (carrying).

[0012] The outline of the electric composition of the lock/unlock control system 4 prepared in said house 1 side is shown in drawing 2 . [ this lock/unlock control system 4 / a microcomputer / the control

circuit 6 which becomes as a subject ] Bluetooth which functions as a wireless data communication means A unit 7, the input part 8 which functions as an input means, and the memory 9 which functions as a memory means to memorize ID information and a password are connected, and it is constituted. Moreover, said control circuit 6 outputs and has locking or a unlocking signal to said electric lock equipment 3, and controls lock/unlock.

[0013] Said Bluetooth A unit 7 is Bluetooth as everyone knows. The wireless data communication by standard practice is performed, and a data communication is performed between said portable telephone equipment 5 so that it may mention later. Moreover, said input part 8 is equipped with a keyboard etc., for example, and in initialization mode, a user sets up ID information (telephone number of portable telephone equipment 5 in this case), a password, etc., and can input it now. ID information and the password which were entered into said memory 9 from said input part 8 are memorized.

[0014] On the other hand, the outline of the electric composition of said portable telephone equipment 5 concerning this example is shown in drawing 1 . [ equipment ] while this portable telephone equipment 5 is equipped with the control circuit 10 which becomes the main part of a portable size considering a microcomputer as a subject The key control unit 13, the telephone number and partner point name with a loudspeaker 12, and a number key and various kinds of function keys for outputting the microphone 11 for inputting transmission sound and sound which were connected to the control circuit 10, It has the memory 15 the display 14 on which information, including various messages etc., is displayed, ID information mentioned later, a password, etc. are remembered to be, and the RF section (Radio Communications Department) 16 which performs wireless communications with a communications network (base station), and is constituted.

[0015] Moreover, the antenna 17 is connected to said RF section 16. Although explanation detailed now is omitted, various kinds of functions, such as a function of a telephone call (telephone) and a function of \*\*\*\*\* of e-mail (character message), are realized by the software composition centering on processing operation of said control circuit 10. In addition, this portable telephone equipment 5 has ID information, including a country, an entrepreneur number, a telephone number, etc., that each is characteristic all over the world.

[0016] And Bluetooth which functions on said control circuit 10 as a wireless data communication means The unit 18 is connected. This Bluetooth A unit 18 is said Bluetooth. It is Bluetooth like a unit 7. It is what performs the wireless data communication by standard practice. For example, the wireless data communication between other apparatus, such as a personal computer, is made possible into the predetermined communication range (about [ Severalmeters-10 ] m). Portable telephone equipment 5 is this Bluetooth. With the unit 18, it is supposed that it is possible to perform the data communication between the lock/unlock control systems 4 (Bluetooth unit 7).

[0017] Now, said lock/unlock control system 4 [ with the software composition of the control circuit 6 ] Said Bluetooth A unit 7 performs a data communication between the portable transmitters (portable telephone equipment 5) located in the communication range. The attestation information transmitted from the portable telephone equipment 5 is compared with the attestation information registered beforehand, and the lock/unlock of said electric lock equipment 3 is controlled based on the collation result.

[0018] operation [ in / beforehand / as mentioned above / more specifically / in the lock/unlock control system 4 / said input part 8 ] of a user -- ID information -- in this case, it is inputted as attestation information, and it registers with said memory 9 and the telephone number of portable telephone

equipment 5 is memorized. In this case, when using two or more portable telephone equipment 5 which a family has, respectively as a portable transmitter (key), two or more ID information is registered. [0019] And so that next operation explanation may also describe [ the lock/unlock control system 4 ] turning within limits which can be communicated at the time of the usual use -- being periodical (intermittent) -- if the invasion signal from said portable telephone equipment 5 is received while sending a scanning signal, it will become communicate mode with the portable telephone equipment 5, and a request signal will be transmitted. And if the unlocking signal or locking signal from portable telephone equipment 5 is received, ID information (telephone number in this case) included in that signal is compared with ID information registered into the memory 9, and if in agreement, electric lock equipment 3 will be unlocked or locked.

[0020] On the other hand, said portable telephone equipment 5 is in the state which invaded by software composition of said control circuit 10 in the communication range with said lock/unlock control system 4 (Bluetooth unit 7). Said Bluetooth The function as a key for performing a data communication between the lock/unlock control systems 4, and performing lock/unlock with a unit 18, is achieved.

[0021] More specifically so that next operation explanation may also describe [ portable telephone equipment 5 ] [ communicate mode / using the RF section 16 / usual ] if the scanning signal from said lock/unlock control system 4 is received Bluetooth It changes to the lock/unlock control mode which performs a wireless data communication between said lock/unlock control systems 4 (Bluetooth unit 7) using a unit 18.

[0022] And in this lock/unlock control mode, in said key control unit 13, if unlocking (UNLOCK) operation is made, ID information (telephone number data) characteristic of that portable telephone equipment 5 will be turned to the lock/unlock control system 4, and it will transmit with a unlocking signal. Moreover, in the key control unit 13, if locking (LOCK) operation is made, with a locking signal, ID information (telephone number data) characteristic of the portable telephone equipment 5 will be turned to the lock/unlock control system 4, and it will transmit. Therefore, the control circuit 10 functions as a communications control means.

[0023] In addition, you may make it make a key make it serve a double purpose, or may make it prepare a key for exclusive use by operating one key of the key control units 13 (for example, the "#" key and the "\*" key) as the unlocking operation in the above-mentioned key control unit 13, and locking operation. Moreover, it can also return now to communicate mode from lock/unlock control mode by cancellation operation of a user in the key control unit 13.

[0024] Next, drawing 3 and drawing 4 are also referred to and described about an operation of the above-mentioned composition. In the above-mentioned lock/unlock regulating system, in order to use portable telephone equipment 5 as a key (portable transmitter), registration of ID information over the lock/unlock control system 4 is needed as mentioned above first. For example in the initialization mode (register mode) of the lock/unlock control system 4, a user operates the ten key of the input part 8, and registration of this ID information is performed by inputting the telephone number of target portable telephone equipment 5. In applying to two or more portable telephone equipment 5, only those parts input ID information, respectively. Thereby, ID information is registered and memorized by the memory 9.

[0025] The flow chart of drawing 3 shows the control procedure concerning a data communication with the lock/unlock control system 4 which the control circuit 10 of portable telephone equipment 5 performs, and the flow chart of drawing 4 shows the procedure of the lock/unlock control which the

control circuit 6 of the lock/unlock control system 4 performs. namely, -- usually sometimes turning the lock/unlock control system 4 first in [ which can be communicated ] the range (for example, severalmeters-10 about m range) -- being periodical (intermittent) -- a scanning signal is sent (Step P1 of drawing 4 ).

[0026] Here, if the user who possesses portable telephone equipment 5 comes back, for example from a place where one has gone, and approaches to near the door 2 and portable telephone equipment 5 invades within limits which can be communicated [ said ], it will come (it is Yes at Step S1 of drawing 3 ) to receive the scanning signal of said lock/unlock control system 4. And if this scanning signal is received, the invasion signal which shows that it invaded within limits which can be communicated will be turned to the lock/unlock control system 4, and it will come (Step S3) to transmit. In addition, portable telephone equipment 5 is made into the usual communicate mode out of [ which can be communicated / said ] the range, and various kinds of functions, such as a function of a telephone call (telephone) and a function of \*\*\*\*\* of e-mail (character message), are realized (Step S2).

[0027] [ the lock/unlock control system 4 ] if the invasion signal from the above-mentioned portable telephone equipment 5 is received (it is Yes at Step P2 of drawing 4 ) Bluetooth Bluetooth of a unit 7 and portable telephone equipment 5 It comes (Step P3) to be considered as the data communication mode for performing a wireless data communication between units 18. Shortly, a request signal is turned to portable telephone equipment 5, and it comes (Step P4) to transmit.

[0028] And portable telephone equipment's 5 reception of said request signal will come (Step S5) to change it from communicate mode to lock/unlock control mode (it is Yes at Step S4 of drawing 3 ). Although illustration has not been carried out in detail, while having changed to lock/unlock control mode is displayed, for example on a display 14, in unlocking, in this lock/unlock control mode, the "#" key and the purport that the "\*" key should be operated in locking come to be displayed. In addition, if a user performs cancellation operation in the key control unit 13, it can return to the usual communicate mode here.

[0029] setting to the key control unit 13, when a user (possessor of portable telephone equipment 5) wants to make the electric lock equipment 3 in a locking (LOCK) state unlocked now that a door 2 should be opened and a room should be entered (UNLOCK) -- unlocking operation -- ON operation of the "#" key is performed in this case (it is Yes at Step S6 of drawing 3 ). Then, a unlocking signal comes (Step S8) to be transmitted towards the lock/unlock control system 4 with ID information (data of the telephone number of the portable telephone equipment 5). moreover -- setting to the key control unit 13, when a user wants to lock by coming out of a door for going out -- locking operation -- ON operation of the "\*" key is performed in this case (it is Yes at Step S7). Then, a locking signal comes (Step S9) to be transmitted towards the lock/unlock control system 4 with ID information.

[0030] On the other hand, it is compared whether if the above-mentioned unlocking signal or a locking signal is received (it is Yes at Step P5 of drawing 4 ), ID information of the lock/unlock control system 4 as attestation information included in the signal corresponds with either of the registered ID information (Step P6). As a result, when not in agreement, an error signal is transmitted to No) and portable telephone equipment 5 at the (step P7 (Step P8).

[0031] As a result of collation, when ID information is in agreement, at the (step P7 Yes), When a received signal is a unlocking signal, a unlocking signal is made to output and unlock towards Yes) and electric lock equipment 3 at the (step P9 (Step P10), and after this, the completion signal of the purport

that control of lock/unlock was completed is turned to portable telephone equipment 5, and it transmits (Step P11). When a received signal is a locking signal, output a locking signal and it is made to lock towards No) and electric lock equipment 3 at the (step P9 (Step P12), and after this, a completion signal is turned to portable telephone equipment 5, and it transmits (Step P13).

[0032] Portable telephone equipment 5 will perform completion information on the screen (or buzzer sound) of a display 14, if said completion signal is received (it is Yes at Step S10 of drawing 3 ) (Step S11). Moreover, portable telephone equipment 5 performs No) and error information at the (step S10, when the above-mentioned error signal is received (Step S12). Now, the user can perform [ what is called remote control that used portable telephone equipment 5 as the key ] locking of the electric lock equipment 3 of a door 2, and unlocking.

[0033] In addition, in this example, if a definite period of time passes after unlocking of the above-mentioned electric lock equipment 3 is performed (it is Yes at Step P14 of drawing 4 ), as for the lock/unlock control system 4, locking of electric lock equipment 3 will be made automatically (Step P15). Or when portable telephone equipment 5 separates from the inside of a communication range (i.e., when reception of an invasion signal is lost), you may constitute so that electric lock equipment 3 may be locked automatically.

[0034] Moreover, the lock/unlock control system 4 can also memorize the data of the time when lock/unlock of the electric lock equipment 3 was carried out, ID information at that time (used portable telephone equipment 5), etc. Furthermore, when the above-mentioned error (disagreement of ID information) continued two or more times, it was also able to be said that registration of subsequent signals was forbidden. What is necessary is just to change registration of ID information in the lock/unlock control system 4, even if it can use it of course as a key as it is and a telephone number will be changed, if there is no change of a telephone number even if a model change of portable telephone equipment 5 is made.

[0035] Thus, according to this example, it is Bluetooth to portable telephone equipment 5. A unit 18 can be formed, the data communication between the lock/unlock control systems 4 can be performed, and the lock/unlock of electric lock equipment 3 can be made to control now. As a result, can make portable telephone equipment 5 use also [ transmitter / which is used as a key of a lock/unlock regulating system / portable ], and [ a user ] If portable telephone equipment 5 is carried, it will become unnecessary to carry a portable transmitter separately, and the outstanding effect that improvement in a user's convenience can be aimed at will be done so.

[0036] In this case, since characteristic ID information given to that portable telephone equipment 5 was used as attestation information used for control of the lock/unlock in the lock/unlock control system 4 It becomes possible to set up easily the attestation information in the lock/unlock control system 4 in the user side, without causing confusion of performing and carrying out malfunction of the mistaken attestation. Moreover, Bluetooth in which a data communication with other apparatus, such as a personal computer, is especially possible as a wireless data communication means in this example since the unit 18 was adopted The advantage that the wireless data communication between portable telephone equipment 5 and the lock/unlock control system 4 can be performed easily can also be acquired without establishing the special means of communication only for communication with the lock/unlock control system 4.

[0037] In addition, it is not limited to the above-mentioned work example, and the following various escapes and change are possible for this invention, and within limits which do not deviate from a

summary further even except having indicated, it can be changed suitably and can be carried out. [0038] That is, at the above-mentioned work example, it is Bluetooth to portable telephone equipment 5 as a wireless data communication means. A unit 18 is formed and it is Bluetooth. although it was made to perform the wireless communications by standard practice Using the RF section which portable telephone equipment has, the minute electric power wireless communications using the specific frequency in the frequency range used for communication with a communications network may constitute so that a data communication may be performed between lock/unlock control systems. It becomes possible to make the RF section which it has from the first make it serve a double purpose as a wireless data communication means of portable telephone equipment by this, and composition can be finished easily. Bluetooth Of course, you may adopt the wireless data communication means of various standard practice other than standard practice.

[0039] Moreover, in the above-mentioned work example, although ID information on portable telephone equipment 5 (telephone number) was adopted as attestation information, you may be made to perform attestation with a password. for example, to unlock electric lock equipment In lock/unlock control mode, a user enters a password using the key control unit of portable telephone equipment. The inputted password data is transmitted with ID information, and it can have composition of performing collation with those data beforehand registered into the memory about the both sides of ID information and a password, and unlocking when in agreement, in the lock/unlock control system side. In this case, as a password, you may be beforehand set to the lock/unlock control system side, and the password of portable telephone equipment can be adopted as it is, or it can also have composition to which a user can set arbitrary passwords.

[0040] And although locking or unlocking was specified by key operation of a user in the above-mentioned work example It may only be made to unlock by key operation (or password input). Moreover, based on detection of portable telephone equipment having invaded into communication within the limits, it unlocks automatically, and portable telephone equipment can come out from the communication range, and it can also have composition without key operation of sometimes locking automatically. You may prepare the key for exclusive use for directing locking and unlocking to portable telephone equipment.

[0041] In addition, a data communication may be made to perform also about registration of ID information by the side of a lock/unlock control system, or a password, and the various change also as a check protocol in a data communication is possible. Moreover, you may make it apply this invention, for example to the door of not only the lock/unlock of the door of the door of a house but a car, the lock/unlock of the door of a specific institution, etc., and, still more of course, a PHS terminal machine etc. is contained in portable telephone equipment. Of course, it is good also as composition which can use the both sides of portable telephone equipment and the portable transmitter only for lock/unlock as a key.

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### [Brief Description of the Drawings]

[Drawing 1] The block diagram in which showing one work example of this invention, and showing the electric composition of portable telephone equipment roughly

[Drawing 2] The block diagram showing the electric composition of a lock/unlock control system roughly

[Drawing 3] The flow chart in which the procedure which the control circuit of portable telephone equipment performs is shown

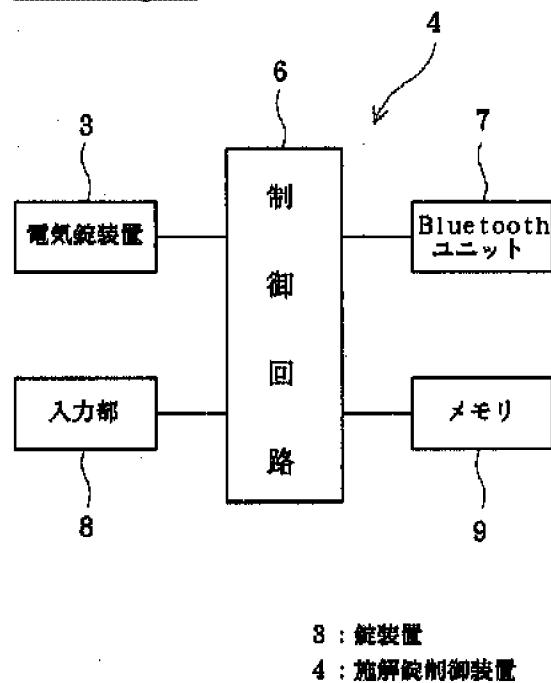
[Drawing 4] The flow chart in which the procedure which the control circuit of a lock/unlock control system performs is shown

[Drawing 5] The figure showing the entire configuration of a system typically

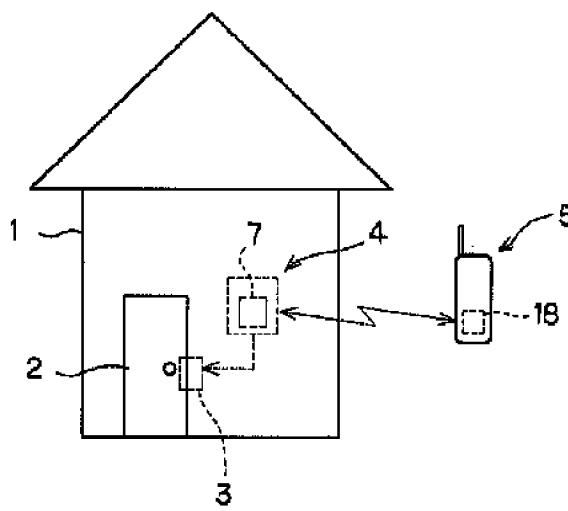
[Explanations of letters or numerals]

Two among Drawings a door and 3 electric lock equipment (lock equipment) and 4 A lock/unlock control system, 5 -- portable telephone equipment and 6 -- a control circuit and 7 -- Bluetooth a unit and 8 -- an input part and 9 -- a memory and 10 -- a control circuit (communications control means) and 13 -- a key control unit and 15 -- a memory and 16 -- the RF section and 18 -- Bluetooth A unit (wireless data communication means) is shown.

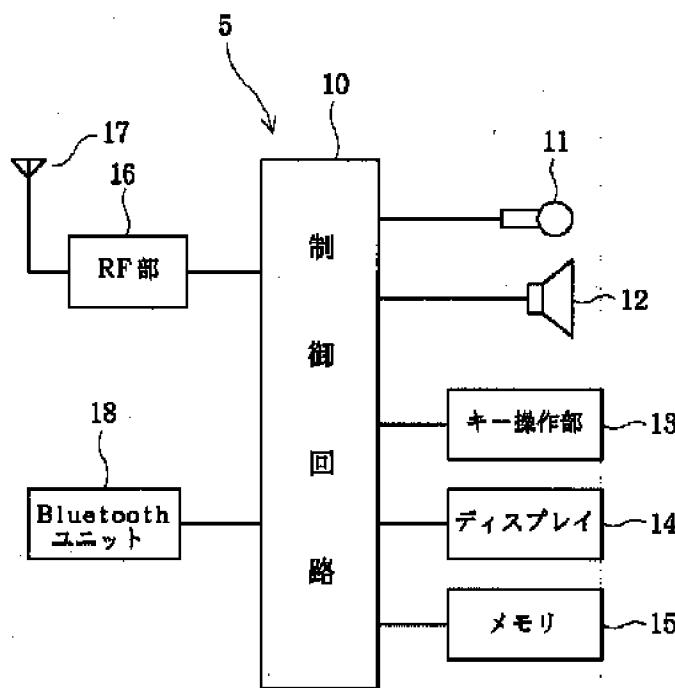
[Drawing 2]



[Drawing 5]



[Drawing 1]



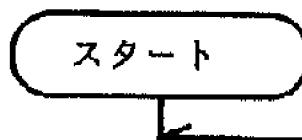
5 : 携帯型電話装置

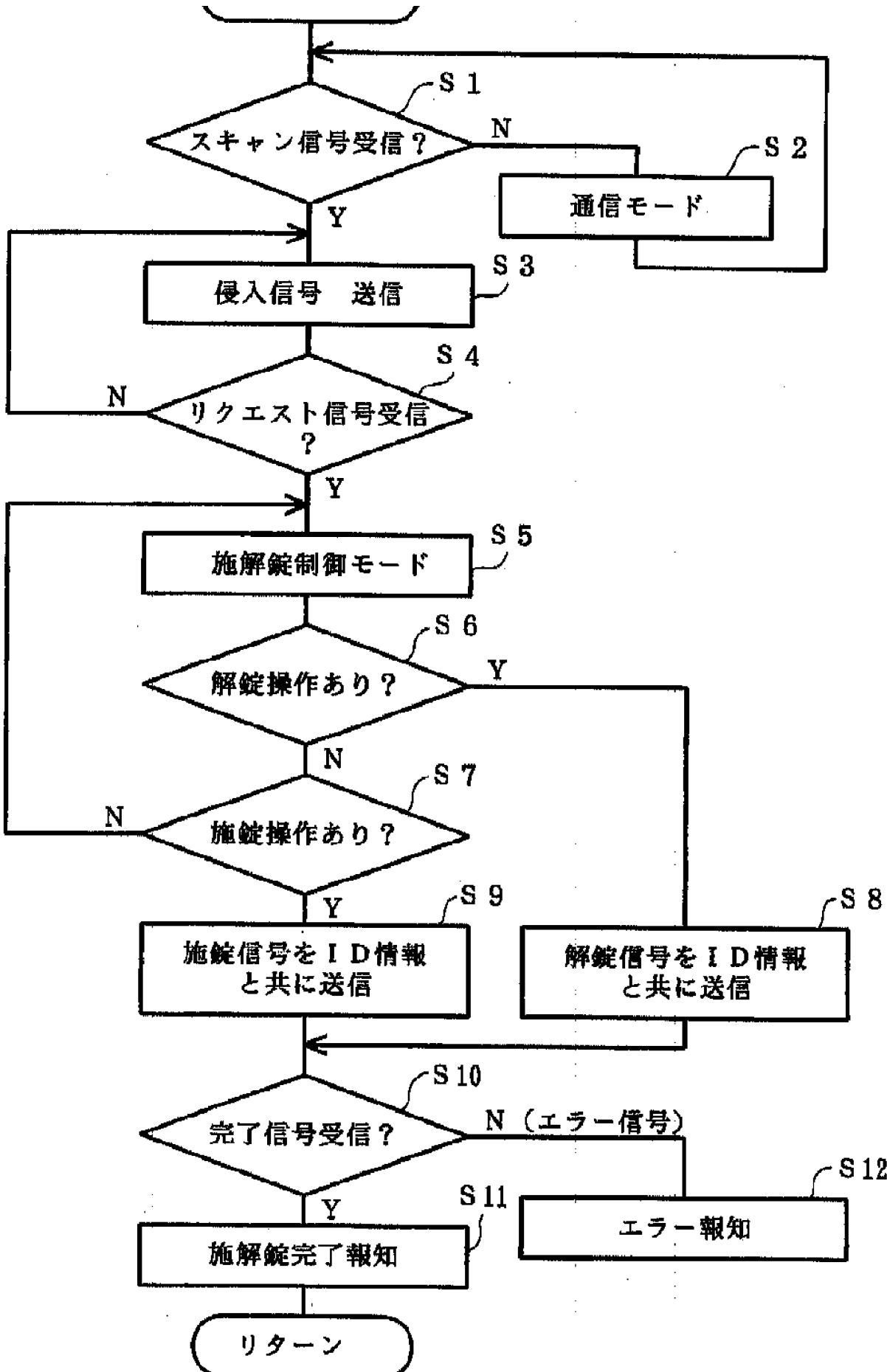
10 : 通信制御手段

13 : キー操作部

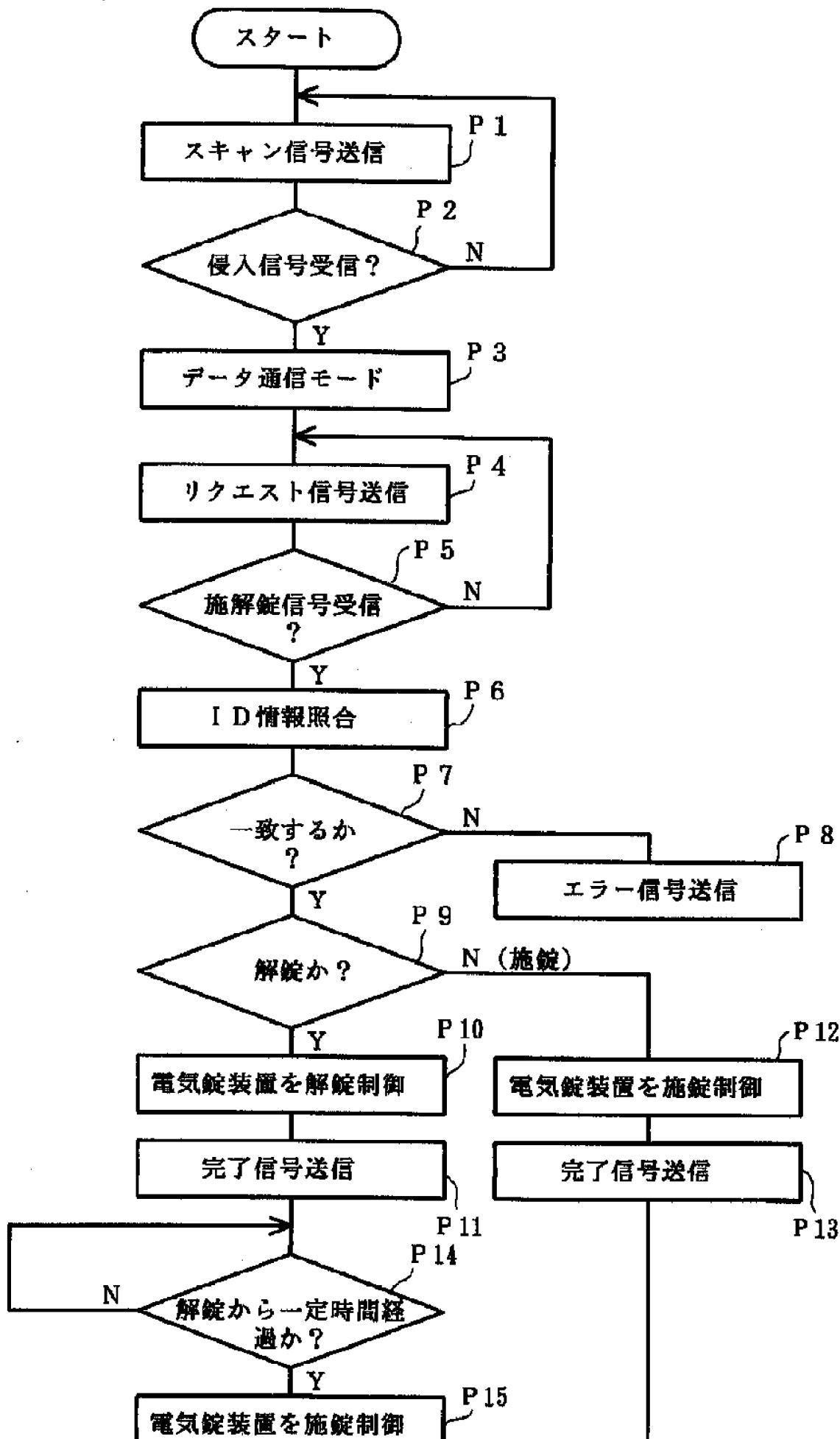
18 : ワイヤレスデータ通信手段

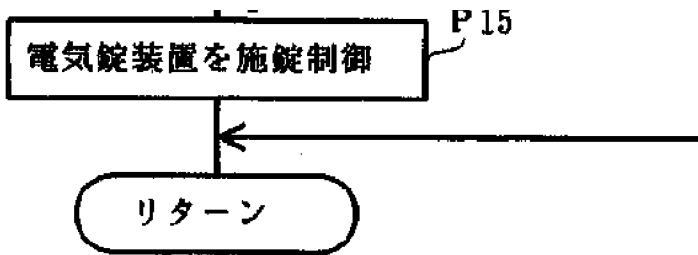
[Drawing 3]





[Drawing 4]





[Translation done.]